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FINAL REPORT FOR SOILS  
FOR THE  
TRANSIT AMERICA INC. RED LION ROAD FACILITY

*Ground Water Final Report - Submitted December, 1999*  
*Supplemental Ground Water Final Report - Submitted June, 2000*

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Submitted by: Transit America Inc.  
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Submitted to: Pennsylvania Department of Environmental Protection  
Environmental Cleanup Program  
Southeast Regional Office  
Conshohocken, Pa. 19428

Persuant to: Pennsylvania Land Recycling and  
Environmental Remediation Standards Act (Act 2)

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June 2000

**FINAL REPORT FOR SOILS  
TRANSIT AMERICA INC. RED LION ROAD FACILITY**

**JUNE 9, 2000**

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## Section 1 - Introduction

### 1.1 - Executive Summary

This *Act 2 Final Report* addresses all conditions other than ground water and surface water at the property owned by Transit America Inc. ("Transit America"), located on Red Lion Road in Philadelphia and Montgomery Counties, Pennsylvania ("Site"), as shown in Figure 1. It is being submitted concurrently with the *Supplemental Ground Water Final Report* and, together, the two reports represent the final Act 2 submissions relating to the Site. The *Ground Water Final Report* (December 1999) for the Site demonstrated attainment of the selected Act 2 standards for ground water and was approved by the PADEP in March 2000 as described below. This *Final Report* demonstrates attainment of the selected Act 2 standards for soils and the remaining Site conditions, and describes the associated remedial measures undertaken pursuant to the *Cleanup Plan* (March 1998). The *Supplemental Ground Water Final Report* documents the extension of the area of the Site along the north side of Red Lion Road which meets the residential Site-Specific Standards for ground water (to match those Site areas where the residential Statewide Health Standards for soils are met).

The Site covers approximately 214 acres as shown in Figure 2. Twenty of the 214 acres lie south of Red Lion Road; the other 194 acres lie north of Red Lion Road. Manufacturing activities on the property were terminated in April 1987. Since 1987, Transit America has characterized in detail the environmental conditions on the property and has successfully completed a series of comprehensive environmental remedial action programs throughout the property involving storm water, ground water, surface and subsurface soils, underground storage tanks, and facility structures. The property, its history, Site environmental programs and remedial actions through February 1998 are described in the *Act 2 Remedial Investigation Report* (March 1998).

After carefully analyzing options for the redevelopment of the property, Transit America selected the construction of an 18-hole public golf course and associated facilities as the best future use of the property for the 194 acres located north of Red Lion Road. The golf course development plan is presented in detail in the *Remedial Investigation Report*. The 20 acres south of Red Lion Road, while included in Transit America's Act 2 project, are not currently included in the golf course plan and may be developed for other purposes. The Act 2 cleanup program was integrated closely with the golf course development plan. Golf course construction activities were initiated in March 2000 and are targeted for completion by 2001.

In compliance with Act 2, Transit America prepared the *Remedial Investigation Report* (including the *Ground Water Remedial Investigation Report*), *Risk Assessment Report* and *Cleanup Plan*, which were submitted to PADEP in March 1998. These Act 2 documents were approved by PADEP on May 7, 1998. The *Remedial Investigation Report (Volumes 1 and 2)* contains a detailed description of environmental conditions at the Site and describes the numerous investigations and remedial actions undertaken by Transit America on a voluntary basis since 1987. The *Risk Assessment Report* evaluated human health and ecological risk associated with regulated substances present at the Site and confirmed that the remediation standards established by Act 2 would be attained while converting the use of the Site to a public golf course. The risk assessment findings demonstrated that in order to meet the selected remediation standard under Act 2, regulated substance concentrations present in surface soils in the Jet Pad Area had to be addressed. The risk assessment also concluded that the regulated substances present in subsurface soils would meet the selected remediation standard under Act 2 if left undisturbed and subject to institutional controls.

The *Cleanup Plan* documented the remedial actions to be conducted to achieve the Act 2 standards for soil and ground water and presented the golf course development plans. The *Cleanup Plan* also described the additional voluntary remedial measures that Transit America planned to complete during golf course construction.

The *Ground Water Final Report* was prepared after completion of ground water remedial activities and was submitted to PADEP in December 1999. The *Ground Water Final Report* demonstrated the attainment of the selected Act 2 Site-Specific Standards in accordance with the PADEP-approved *Cleanup Plan* and was approved by PADEP on March 10, 2000.

## 1.2 – Remedial Investigation Report Findings

The PADEP-approved *Remedial Investigation Report (RI Report, Volume 1)* provided the results of (1) the extensive characterization of soils, buildings and structures, and (2) the pre-Act 2 remedial actions performed by Transit America at the Site. The relevant findings are summarized as follows:

- Eight former subsurface disposal areas were identified and characterized for PCBs, VOCs, metals and other priority pollutants by analysis of approximately 4,000 split spoon soil samples. The eight areas are: Chevrolet Areas #1 and #2, East and West Wash Areas, Mahon Area, Pickling Area, Staging Area and West Side Area (see Figure 2). PCBs, specifically Aroclor 1248, are the predominant regulated substance associated with these eight former subsurface disposal areas as detailed in the *Remedial Investigation Report*.
- Soil vapor extraction for removal of VOCs was performed in six of the former disposal areas which contained these constituents. As a result, VOCs were not found to be present above Statewide Health Standards for non-residential soils with consistency in any former



disposal area, except for one pocket of soil, about 10 to 18 feet deep, in the Pickling Area.

- For surface soils, PCB concentrations across the 157 acres of the Site that were covered with grass, vegetation, or gravel can be summarized as follows:

-	less than 9.9 ppm	135 acres
-	9.9 - 44 ppm	15 acres
-	44 - 250 ppm	5.4 acres
-	251 - 750 ppm	1.2 acres
-	greater than 750 ppm	0.4 acres

The Statewide Health Standard for PCBs (Aroclor 1248) for residential surface soils is 9.9 ppm and for non-residential surface soils is 44 ppm. The other 57 acres of the 214 acre property were under roof, paved, or occupied by railroad spurs. As documented in the *Remedial Investigation Report*, certain floor slab areas from the former buildings also contain PCBs.

- Metals in the former disposal area and surface soil areas investigated around the Site were detected infrequently and at relatively low concentrations. No metals were found to be present above the Act 2 Statewide Health Standards for non-residential soils except for six isolated and sporadic detections around the Site.
- Five discernable construction debris piles totaling about 7,600 cubic yards were present on the ground surface in the western sector of the property. The majority of the debris either did not contain PCBs or exhibited relatively low concentrations (43 samples out of the total of 50 contained PCBs at 8 ppm or less).
- The most prominent buildings on the property were the 25 acre (1.1 million square feet), concrete, Main Assembly Building ("MAB") and the five acre cinder block and steel

*Chevrolet Building. Other key structures on the property from an environmental standpoint included 1) a building extension to the MAB called the Rainbow Room; 2) a two million gallon capacity Concrete Basin and associated Pump House, formerly used for recirculating cooling water to and from the MAB; 3) a Power House, housing boilers and air compressors; 4) an incinerator with exhaust stack, idle since the 1970s; and 5) a Pickling House, once utilized in conjunction with metal pickling operations.*

- PCBs were detected on and in the top layer of interior surfaces of several buildings and structures (except for the incinerator). The PCB data were used 1) to determine the need for additional decontamination prior to demolition or off-site disposal, 2) to determine the potential for demolition debris to be used as fill or other beneficial reuse on the property; and/or 3) to define suitable off-property disposal options for the debris not used on the property following demolition.
- Six additional underground tank or vault areas were also identified. These included two former underground fuel tank areas, a brick cesspool, two tanks at 8 to 10 ft depth formerly used to store aviation fuel, and two series of concrete vaults, formerly used for sedimentation and oil-water separation. Soil samples from within the two former (previously removed) underground fuel tank areas were analyzed for VOCs, polynuclear aromatic hydrocarbons (PAHs) and lead, which were well below the Statewide Health Standards for soil. Samples of residual materials from within the cesspool and vault structures exhibited VOCs and/or PCBs. Samples from soil borings external to these structures exhibited only trace levels of regulated substances, all below the Statewide Health Standards for soil except for one isolated detection of silver near the cesspool. The soil and ground water conditions surrounding the former aviation fuel tanks were

adequately characterized as part of the adjacent Pickling Area and former Tank Area D subsurface investigations (see *Remedial Investigation Report*).

An exposure pathway analysis, performed in compliance with Act 2 requirements, was presented in the *Human Health Risk Assessment Report*.

### 1.3 – Risk Assessment Findings

The PADEP-approved *Human Health Risk Assessment Report*, which was the basis for the identification of the Act 2 Site-Specific Standards for soil, concluded the following:

- PCBs in subsurface soils on the property are unavailable for direct contact. PCBs in subsurface soils do not pose a migration threat and PCB volatilization from subsurface soils is insignificant.
- VOCs in subsurface soils have been reduced to low levels by the successful application of the soil vapor extraction remedial actions. One subsurface pocket of VOC concentrations in soils above the non-residential Statewide Health Standards remained at the Pickling Area. The risk assessment calculation of exposure to golf course maintenance workers by volatilization from this area confirmed that the Act 2 Site-Specific Standard was met. It should be noted that air sparging was implemented in this area to further reduce the concentrations of VOCs as a voluntary remedial measure, thus, further reducing the calculated risk for this area.
- Based upon conservative exposure assumptions, the risk assessment confirmed that the Act 2 standard for cancer risk was met and that surface soils containing greater than 1,000 ppm PCBs in the Jet Pad area had to be removed to meet the hazard index of 1.0 specified in Act 2. By removing the delineated surface soils with greater than 1,000 ppm PCBs in the Jet

Pad area, the hazard index was reduced to significantly below 1.0 and the cancer risk level was further reduced.

- Six isolated, surface soil samples from separate areas of the Site exhibited a metal concentration exceeding the Statewide Health Standard for direct contact as follows:
  - antimony in the West Side Area;
  - lead in the West Side Area;
  - vanadium at Chevrolet Area #1;
  - vanadium at East Drainage Swale adjacent to the Concrete Basin;
  - arsenic in the southeastern sector of the Site just upgradient of the Concrete Basin – East Drainage Swale; and,
  - beryllium in the drainage channel in the Stormwater Retention Area.

A site-specific assessment in the *Human Health Risk Assessment Report* demonstrated compliance with the Site-Specific Standard for beryllium. No site-specific risk assessment was performed for the remaining metal detections above the Statewide Health Standards because these surface soils would be removed and/or covered with a minimum 12 inches of soil.

#### 1.4 – Soil Remediation Standards

Based on the conclusions of the PADEP-approved *Human Health Risk Assessment Report* and taking into account the planned future use of the Site, Site-Specific Standards were established in accordance with Act 2. The PADEP-approved *Cleanup Plan* described the following remedial actions for the Site.

Subsurface Soils - The eight former disposal areas, i.e., Chevrolet Area #1 and #2, the East and West Wash Areas, the Mahon Area, the Pickling Area, the Staging Area, and the West Side Area, will be left in place undisturbed (Figures 2 and 3). All air inlet and SVE exhaust piping in place from the SVE remedial action program will be cut-off at ground surface and will be grouted full and abandoned in place. For the most part, these eight areas will be avoided by the routing of the golf course holes and will remain undisturbed during golf course construction. These areas will be deed restricted to limit future disturbance.

Surface Soils - Surface soils in the Jet Pad Area which exceed 1,000 ppm PCBs at the surface (three distinct areas in total) will be removed to a nominal depth of 18 inches, about 120 cubic yards, and disposed of off-property at a permitted facility. The excavated areas will be backfilled with soil. These three localized areas total approximately 2,200 square feet and are shown on Figure 4. It is this localized surface soil area with PCBs that is identified in the *Human Health Risk Assessment Report* for removal and cover in order to reduce the calculated hazard index to significantly less than 1.0 in compliance with the Act 2 Site-Specific Standards.

### 1.5 – Voluntary Remedial Measures

As described in the *Cleanup Plan*, Transit America planned additional voluntary remedial measures. These additional measures were not driven by the risk assessment but do provide significantly greater environmental benefits for the Site. The basis for these additional measures are presented in the *Cleanup Plan*.

## 1.6 – Purpose of the *Final Report for Soils*

This *Final Report for Soils* has been prepared by O'Brien & Gere Engineers, Inc. on behalf of Transit America, to demonstrate attainment of the Act 2 cleanup standards for soil. Remedial measures conducted to achieve Act 2 standards for ground water were documented in the Act 2 *Ground Water Final Report* submitted in December 1999 and subsequently approved by PADEP on March 10, 2000. This *Final Report for Soils* and the *Supplemental Ground Water Final Report*, submitted concurrently with this report, are the final submissions to PADEP under the Act 2 Program.

## 1.7 – Final Report Organization

*Section 2 – Act 2 Remedial Actions* presents the remediation activities completed in accordance with the *Cleanup Plan*. *Section 3 – Attainment Demonstration* documents the attainment demonstration of the Act 2 remediation standards for soil. *Section 4 – Additional Remedial Measures* presents the additional remediation activities that Transit America has elected to complete. *Section 5 – Site Development/Golf Course Master Plan* presents the facility deactivation and utility modification work completed as part of the redevelopment plans of the Site in addition to the final Golf Course Master Plan. *Section 6 – Conclusions* presents conclusions regarding the Act 2 soil remediation and the selected Act 2 standards achieved. *Section 7 – Post Remediation Care Requirements* describes deed acknowledgement and specific deed restrictions that will be prepared in accordance with Act 2. *Section 8 – References* provides a complete list of documents included by reference as an integral part of this *Final Report for Soils*.

## Section 2 – Act 2 Remedial Actions

Act 2 soil remedial actions were completed in accordance with the PADEP-approved *Cleanup Plan* as described below.

### 2.1 – Subsurface Soils

#### 2.1.1 - Former Disposal Areas

In accordance with the *Cleanup Plan*, the eight former disposal areas (Chevrolet Areas #1 and #2, the East and West Wash Areas, the Mahon Area, the Pickling Area, the Staging Area and the West Side Area) were left in place and undisturbed to limit direct contact with the regulated substances contained in these areas (see Figure 3). The Act 2 Site-Specific Standard of a no exposure pathway is met by the institutional control of a deed restriction placed on these eight former disposal areas that will prohibit future disturbance of these areas by all future owners/occupants as described in Section 7. The golf course was routed around these areas to avoid disturbance during golf course construction.

#### 2.1.2 – Soil Vapor Extraction/Air Sparging System Abandonment

As described in the *Cleanup Plan*, soil vapor extraction/air sparging (SVE/AS) was implemented in the Pickling Area as an additional remedial measure in preparation for golf course construction. The attainment of the Act 2 Site-Specific Standards in this area, did not depend on the continued operation of the SVE/AS system operation. As a remedial measure even more conservative than the proposed six months of operation outlined in the *Cleanup Plan*, the SVE/AS system operated for approximately twelve months. Operation of this system

was terminated once meaningful removal rates were no longer being achieved as discussed in Section 4.2. SVE and AS equipment was disconnected and SVE/AS air inlet and SVE exhaust piping were cut off at ground surface. The SVE/AS wells were abandoned by filling with grout.

## 2.2 – Surface Soils

### 2.2.1 – Jet Pad Area

As specified in the *Cleanup Plan*, the three localized surface soil areas in the Jet Pad Area with PCB concentrations in excess of 1,000 ppm were removed to a minimum depth of 18 inches and disposed of off-property. Based on the PCB results for this area from the *Remedial Investigation Report*, the three localized surface soil areas in the Jet Pad Area with greater than 1,000 ppm PCBs were delineated. Final surface soil excavation limits were established and staked in the field by a PA-licensed surveyor using the updated data base for PCBs as shown in Figure 4. In total, approximately 120 cubic yards of soil from the area were removed. These soils were placed into roll-off containers and disposed of at the EQ Landfill in Belleville, Michigan. The excavated area was backfilled with soil from an on-site borrow area and compacted to grade. As described in Section 4, the entire Jet Pad Area was subsequently covered with over 12 inches of additional soil cover as a remedial measure. By removing the localized areas of surface soil with greater than 1,000 ppm PCBs and backfilling, the calculated hazard index from the *Human Health Risk Assessment Report* was reduced to significantly less than 1.0. The additional soil cover remedial measure in this area provided further environmental benefit and further reduced risk.



### **2.2.2 – Outlet Swale/Grid No. 24 Area**

As presented in Section 4.3 of the *Cleanup Plan*, a localized area of surface soil at the Outlet Swale/Grid No. 24 location (Figure 5) exceeded the residential Statewide Health Standard for PCBs in soil of 9.9 ppm. In accordance with the *Cleanup Plan*, surface soil containing PCBs greater than 9.9 ppm was removed from this area to attain the residential Statewide Health Standard, resulting in a contiguous, delineated area along the western fenceline and Pine Road perimeter which meets the residential Statewide Health Standard for PCBs in soil (Figure 2).

The Outlet Swale/Grid No. 24 surface soil area shown in Figure 5 with PCB concentrations greater than 9.9 ppm was previously characterized in the *Remedial Investigation Report* with just three of the soil samples collected from this area exhibiting PCB levels above the 9.9 ppm standard. Prior to removal, additional horizontal and vertical delineation samples were collected (Figure 5) and analyzed to confirm the localized area with PCBs greater than 9.9 ppm and to pre-delineate the excavation limits required to attain the selected Statewide Health Standard for soil. The analytical results from this pre-delineation sampling program are included in Figure 5. Surface soil from this area containing greater than 9.9 ppm PCBs was excavated and disposed of off-site at the EQ Landfill in Belleville, Michigan. The final Outfall Swale/Grid No. 24 soil excavation limits are shown in Figure 5 with the PCB results (ranging from non-detect to 6.7 ppm) showing attainment for the remaining in-place soils.

### Section 3 – Attainment Demonstration

The purpose of this section is to demonstrate attainment of the selected Act 2 remediation standards for soil. As described in Section 2 above, Transit America has completed the required Act 2 surface and subsurface soil remedial actions in accordance with the *Cleanup Plan*.

#### 3.1 – Attainment of Site-Specific Standards for Soil

Transit America attained the selected Site-Specific Standard for soil based on golf course use. A deed acknowledgement specifying appropriate restrictions on Site-related activities will be prepared. No further remedial action or institutional/engineering controls are required to achieve the Site-Specific Standard for soil under Act 2. Zoning authorizations for golf course use have been obtained and golf course construction is currently in progress.

The Act 2 Site-Specific Standard for soil was met by 1) localized removal and off-site disposal of targeted soil, followed by placement of soil cover in the excavated areas, and 2) restrictions on excavation or other disturbances within the eight subsurface former disposal areas. Legal restrictions on excavation or disturbance within these areas will be instituted in the form of a deed acknowledgement with specific deed restrictions as described in Section 7. Detailed survey coordinates for deed restriction purposes have been collected by a PA-licensed surveyor and will be recorded within the appropriate deed acknowledgements. Based on the remedial measures completed in accordance with the *Cleanup Plan*, the Site-Specific Standards for soil under Act 2 have been met for the entire Site. The soil sample analyses conducted for the Site are included in the *Remedial Investigation Report*. The detected regulated substances, which meet the selected Act 2 soil standards, are listed in Table 1.

### 3.2 – Attainment of Residential Statewide Health Standards for Soil

Transit America considered the potential for future residential land use in portions of the Site.

Accordingly, two areas of the Site have been remediated to accommodate potential future residential use consistent with the Act 2 standards. These two areas, highlighted in Figures 2 and 3, are as follows:

- the approximately 29 acre contiguous area extending from the northwestern corner and western perimeter of the Site, along Pine Road and within Montgomery County, to the southern property perimeter within Philadelphia and Montgomery Counties and along Red Lion Road for the length of the Site. (referenced herein as "Pine/Red Lion Road Perimeter Parcel").
- the 20 acre former South Parking Lot, south of Red Lion Road ("South Lot Parcel").

Analytical results, as summarized within the *Remedial Investigation Report, Volume 1* and in Section 2.0 of this *Final Report for Soil*, demonstrate that these two parcels meet the Act 2 residential Statewide Health Standards for regulated substances in soil. Accordingly, the Pine/Red Lion Road Perimeter Parcel and South Lot Parcel will be surveyed and, in accordance with Act 2, will not be subject to a deed acknowledgement for soil.

## Section 4 - Additional Remedial Measures

### 4.1 - Overview

To prepare the Site for golf course construction, Transit America completed a variety of additional voluntary remedial measures not required for the attainment of the Act 2 Site-Specific Standards as described in Section 4 of the *Cleanup Plan*. Additional remedial measures not driven by the risk assessment, that were conducted by Transit America will result in an end use (the golf course) that is far more protective of human health and the environment than required by Act 2. These additional remedial measures have been closely integrated with the design and redevelopment of the Site as a golf course.

- Completed additional soil vapor extraction and air sparging on the remaining targeted subsurface pocket of VOCs in the Pickling Area.
- Excavated and/or covered surface soil areas containing greater than 44 ppm PCBs in the vicinity of the Stormwater Retention Area. Surface soils were excavated and properly disposed of off-site and/or were covered with approximately 2 feet of soil cover. In total, approximately 1,300 cubic yards of former dredge piles and surface soils containing PCBs from the vicinity of the Stormwater Retention Area were removed for proper off-site disposal.
- Excavated and removed surface soil containing PCBs from a few relatively small, localized areas and properly disposed of the soils off-site. The targeted areas included localized areas within the two drainage swales adjacent to the Concrete Basin containing greater than 44 ppm PCBs in addition to the isolated detection of vanadium above the non-residential Statewide Health Standard. The targeted areas also included an area in the northeast corner

of the Site where surface soils containing greater than 44 ppm PCBs were excavated to match the final golf course grading plan.

- Covered all remaining surface soil areas of the Site containing greater than 44 ppm PCBs with up to 2 feet (12 inches minimum) of soil cover in an integrated fashion with the final golf course design and grading plan. These soil cover areas included the remaining five isolated surface soil areas of the Site which contained various metals above the non-residential Statewide Health Standards.
- Covered the former building floor slabs with a soil cover, pavement or driving range/subbase materials. Former building floor slab areas containing greater than 44 ppm PCBs were either covered with a minimum of 12 inches of soil cover or, in areas designated for future golf course parking, are being covered with approximately 12 inches of pavement/sub-base. The 475,000 square foot future driving range area on the former MAB floor slab (containing less than 44 ppm PCBs) was covered with 12 inches of the size reduced and compacted demolition debris as sub-base to the top astroturf layer.
- Decontaminated and demolished buildings and above grade structures, recovered steel for off-site recycling, size-reduced pervious masonry concrete and brick debris, and beneficially reused the size-reduced debris on the property as subsurface fill material pursuant to the final golf course design. Demolition debris not suitable for use on-site as fill, such as wood, glass, etc., were segregated out and properly disposed of off-site.
- Consolidated scattered masonry debris from around the Site with existing masonry debris piles located at ground surface on the western sector of the property and covered with soil to integrate into the final golf course topography.
- Removed residual #6 fuel oil product and decontaminated former 100,000 gallon

aboveground heating oil tank prior to demolition activities. Conducted limited soil excavation activities in vicinity of former tank following demolition to remove visually impacted soils prior to proper disposal at an off-site facility.

- Decontaminated and permanently closed in-place the two former underground aviation fuel tanks in accordance with applicable regulations.
- Removed the contents of the cesspool and other miscellaneous below-grade structures, properly disposed of the material off-property at a permitted facility, and backfilled the structures. The location of all known underground piping will be identified in the deed acknowledgement for the Site.

Provided below in Sections 4.2 through 4.8 is a detailed description of the above completed remedial measures and how they were integrated into the final golf course design. Most of these remedial measures were completed pursuant to the *Cleanup Plan*. However, as outlined in the *Cleanup Plan*, certain aspects of some of the remedial measures were altered during the detailed engineering and golf course design based on improved knowledge of Site conditions. A description of these adjustments is provided in the sections below. The objectives and functional elements of these additional measures remained unchanged from the *Cleanup Plan*.

#### 4.2 - Subsurface Soils – Pickling Area

As documented in the *Remedial Investigation Report*, extensive soil vapor extraction (SVE) remedial actions were conducted in six former subsurface disposal areas and two former UST areas from 1993 through 1997 to reduce levels of VOCs in soil. These remedial activities resulted in VOC levels which met the Statewide Health Standards for non-residential soils, or as in the case of the Pickling Area, were modeled to show that they met the Act 2 Site-Specific Standards. Independent

of meeting the selected Act 2 standards for VOCs in soils, Transit America elected to further remediate a localized soil pocket in the saturated zone of the Pickling Area comprised of four contiguous soil boring locations (approximately 8,400 square feet), which contained VOCs above the Act 2 Statewide Health Standards. This localized pocket of VOCs was remediated further by application of air sparging with SVE.

Air sparging/SVE activities in the Pickling Area began in November 1997 and were initially planned to run for approximately six months as outlined in the *Cleanup Plan*. Air samples for total VOC analysis and photoionization detector (PID) measurements were periodically collected from the SVE units during the SVE/AS operations to monitor for relative effectiveness of VOC removal activities with time. Based on these measurements and corresponding estimated VOC mass removal rates, SVE/AS operations continued for twelve months into October 1998. Air sample results from October 1998 indicated that VOC mass removal rates decreased substantially in comparison to initial removal rates from November 1997. Based on this information which indicated limited additional benefit in continuing SVE/AS operations in this area, Transit America, with concurrence from PADEP, terminated this activity.

Upon termination of SVE/AS operations, the SVE/AS equipment was removed from the Site and associated piping properly disposed of off-site. The SVE wells, AS points and monitoring points were closed in accordance with the *Cleanup Plan* by filling with a grout mixture and cutting casings to below the ground surface. Well abandonment activities were completed in October 1998 and were documented by an on-site O'Brien & Gere hydrogeologist.

### 4.3 – Surface Soil

#### 4.3.1 - General

Transit America completed additional remedial measures to surface soils by removing localized areas containing PCBs above 44 ppm as outlined below. These localized removal activities were conducted in the Stormwater Retention Area, the Concrete Basin East and West Drainage Swales and the Grid #96 area (northeast corner of the Site). Additionally, as outlined in the *Cleanup Plan*, surface soil areas containing PCBs above 44 ppm were covered with up to 2 feet of soil (12 inches minimum) and vegetated as an integrated design feature with the final golf course plan (Figure 2).

#### 4.3.2 – Stormwater Retention Area

Surface soil areas containing greater than 44 ppm PCBs in the vicinity of the Stormwater Retention Area were excavated and/or covered with 2 feet of soil cover as shown in Figure 6. Excavated areas included former dredge piles in this area in addition to the main drainage channels. In total, approximately 1,300 cubic yards of soil were excavated and properly disposed of off-site at a permitted facility. Following excavation, the drainage channels and associated banks were restored/stabilized using geotech fabric, stone and rip-rap and tied into the surrounding soil cover areas. Additionally, the headwall area leading to the Stormwater Retention Area was restored/stabilized due to apparent undermining from erosion in the past. The soil cover areas were hydroseeded to vegetate the area. These remedial measures were integrated into the golf course final design and hole layout for this area.



#### 4.3.3 - Concrete Basin East/West Drainage Swales

Concrete Basin Eastern Drainage Swale - Previous sampling programs within the drainage swale east of the Concrete Basin as shown in Figure 7, indicated a few localized areas of PCBs in surface soils ranging up to 110 ppm. Pursuant to the *Cleanup Plan*, surface soils in these localized areas of the swale which exhibited PCB levels above 44 ppm were excavated, removed and properly disposed of off-site. The loose soils in the base of the swale (up to 4 inches) were then scraped out and the swale re-graded to a uniform slope and width to promote proper drainage through the area. Additionally, as depicted in Figure 7, soils in the drainage culvert (across the road) leading to this swale were covered with soil and the area restored. These remedial measures addressed the isolated detections of vanadium and arsenic in this area above the non-residential Statewide Health Standards. The soils around the swale and culvert were compacted and covered with a geotextile fabric and rip-rap as long-term erosion control measures consistent with the final golf course design.

Concrete Basin Western Drainage Swale - Analytical results from previous sampling of the drainage swale located just west of the Concrete Basin, as shown in Figure 7, indicated surface soil concentrations of PCBs below 44 ppm except for one isolated sample at 49 ppm collected just upgradient of the beginning of the swale. This isolated area was field delineated using PCB field test screening kits with a detection limit of less than 5 ppm PCBs. Based on this field delineation, the surface area containing greater than 5 ppm PCBs (approximately 10 feet x 10 feet) was excavated to a depth of approximately 12 inches and properly disposed of off-site. This area was then backfilled to grade using soil from an on-site borrow area, soils compacted and the area hydroseeded.

Additionally, evidence of erosion was observed near the outlet of the western drainage swale. Based on this observation, as shown in Figure 7, the swale in this area was regraded and geotech fabric/rip-rap installed to facilitate proper drainage through the area in the future.

#### **4.3.4 – Grid #96 Area**

Analytical results from previous sampling indicated the presence of PCBs above 44 ppm in a localized area in the northeast portion of the Site (see Figure 8). This localized area was designated for soil excavation with proper disposal at an off-site facility, to conform with the final golf course grading plan for this area. Pre-delineation sampling consisting of 4 samples were collected and analyzed for PCBs to pre-determine the limits of excavation to remove soils containing above 44 ppm PCBs. Based on the delineation results, soils were excavated in this area to a minimum depth of 12 inches over an approximate 425 square foot area and properly disposed of at an off-site facility.

#### **4.3.5 - Soil Cover Areas**

In accordance with the *Cleanup Plan*, surface soil areas exhibiting PCB levels above 44 ppm (Figure 2) were covered with up to 2 feet of soil (12 inches minimum) and vegetated as dictated by the final golf course design. To define the areas to be covered with soil, the extensive data base of PCB delineation results, as presented in the *Remedial Investigation Report* were utilized and supplemented with additional surface soil sampling results for refinement purposes. Specifically, additional sampling was conducted in areas where a more refined delineation of PCB areas exhibiting greater than 44 ppm PCBs was required to integrate

the soil cover remedial measures with the golf course design. The sampling procedures and methodology (EPA Method 8082) used for the collection and analysis of these additional samples were consistent with the procedures/methods reported in the *Remedial Investigation Report* for PCB surface soil sampling. Additionally, consistent with the past soil sampling programs at the Site, a surveyor licensed in the Commonwealth of Pennsylvania staked and surveyed all sampling points so these data could be combined with the prior data in the Site environmental database to facilitate the soil cover final design. The additional PCB surface soil data collected since submission of the *Remedial Investigation Report* and associated coordinates are included in Appendix A.

A phased approach was used to implement the *Cleanup Plan* soil cover remedial measure components with golf course final design and construction. Initially, as described above, refinements were made in delineating some surface soil areas exhibiting greater than 44 ppm PCBs for golf course design purposes by conducting additional delineation sampling. Based on final delineation results, an engineering design was developed to provide each soil cover for each surface soil area containing greater than 44 ppm PCBs. The soil cover remedial measure was then completed as designed using soils from a designated on-site borrow area. Simultaneous to this field construction activity, the integrated golf course architectural and engineering designs were finalized taking into account the final PCB delineation results and soil cover areas (designated as restricted excavation areas for golf course contractor/construction purposes). The restricted excavation areas were surveyed in and staked for clear demarcation, allowing final golf course construction activities to begin whereby final grading consists of cuts only from the non-restricted areas.

#### 4.3.3.1- Soil Borrow Area

As indicated above, surface soil areas with PCB levels above 44 ppm were covered with up to 2 feet (12 inches minimum) of soil obtained from a designated on-site soil borrow area (see Figure 8). On-site soils were also required to complete the appropriate covering of the debris piles and former building floor slab areas around the Site. This area was selected as the soil cover borrow area since: 1) it represented a contiguous deep cut area consistent with the final golf course grading plan, and 2) previous composite grid testing of this area (see *Remedial Investigation Report*) and updated confirmation sampling (10 samples total by EPA Method 8082) all exhibited less than 1 ppm PCBs. In total, this area provided approximately 33,000 cubic yards of soil for use in completing the *Cleanup Plan* remedial measures described herein.

#### 4.3.3.2 - Soil Cover Areas

The final surface soil cover areas were designed using the final Site PCB environmental database as presented in the *Remedial Investigation Report* and updated as described above. These areas are graphically represented on Figures 2, 8 and 9, along with the final interpreted extent of greater than 44 ppm PCBs in surface soils *prior* to covering. As shown, the constructed soil cover areas range in size from approximately 300 square feet to over 200,000 square feet near the former West Side/Berm Area. In total, 15 acres of soil cover on surface soil areas were designed and constructed based on the final surface soil delineation sampling results. Final soil cover placements, configurations and depths were completed to minimize follow-up golf course construction activities in these areas, to the extent practical.

For example, interpolated areas with greater than 44 ppm PCBs were conservatively extended (squared off) to facilitate placement with large construction equipment and to make these locations readily reproducible by survey in the field. To complete the soil cover and related documentation activities for this *Final Report*, the following steps were completed.

#### **4.3.3.3 – Final Delineation Sampling and Soil Cover Design**

The Site electronic environmental database was used to delineate limits of surface soil areas with concentrations of PCBs greater than 44 ppm as provided in the *Remedial Investigation Report*. The sample results for surface soil areas greater than 44 ppm and golf course design/ grading plans were plotted to scale in AutoCad using survey coordinates, which was utilized to identify appropriate sampling locations for refining prior delineation efforts. Based on this analysis, approximately 170 soil samples were collected from the 0 to 6 inch soil depth interval to update and refine the areas designated for soil cover.

The soil cover layout originally presented in the *Cleanup Plan* was appropriately revised to incorporate the additional data and constructability requirements as described above. Areas were conservatively squared off by combining existing data and field constructability requirements into defined final soil cover limits. Additionally, during this design phase, final grade elevations and specifications to cover and stabilize the West Side/Berm Area consistent with the *Cleanup Plan* and golf course plans were completed. A Pennsylvania licensed surveyor was also used to establish and document key nodes from each soil cover

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FROM: SAC, NEW YORK  
SUBJECT: [illegible]

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Figures 8 and 9 show the final constructed soil cover areas across the Site.

#### **4.3.3.4 – Soil Cover Construction Activities**

Construction of each soil cover area was initiated by clearing and grubbing the identified cover areas. While the cover areas were prepared, care was taken not to disturb the wooden survey control points placed at the soil cover key nodes. A silt fence was installed at the base of the West Side/Berm Area slope prior to construction to restrict the potential migration of sediments from entering the Stormwater Retention Area drainage channel. Likewise, silt fencing was installed and maintained around all soil cover areas for the same reasons.

Railroad tracks and associated rail ties around the Site (except where permanently encased in concrete or pavement) were removed and transported off-site for recycling by Allegheny Steel Co. Debris situated on top of the designated soil cover areas were removed and consolidated in the western portion of the Site (see Section 4.4) prior to initiating soil cover activities. Up to 2 feet of soil (12 inches minimum) was placed over the final designated cover areas utilizing soil from the on-site soil borrow area. During soil cover activities, care was taken not to disturb the in-place soil. Soil cover was placed and compacted in lifts using a drum roller (note that in some areas that over 2 feet of soil was required to achieve a proper slope such as near the West Side/Berm Area). Upon completion of compaction activities, disturbed areas were hydroseeded and mulched as needed to minimize erosion of the placed soil cover.

#### 4.4 - Debris Pile Remedial Measures

Remedial measures completed for the debris piles located on the western portion of the Site (Figure 9) are consistent with the *Cleanup Plan* objectives. As detailed below, these measures generally consisted of either segregating materials out for proper off-site disposal or consolidating piles in-place and covering them with soil. The rationale for identifying which materials to remove and which materials to consolidate in-place depended on PCB concentration, the type of debris and the location of the piles relative to the golf course layout. In many cases, debris piles were consolidated in-place to match the layout and grading of the final golf course after appropriate materials (e.g. metal scrap) were removed for off-site recycling. A description of the remedial measures conducted for each major category of debris pile at the Site is provided below.

##### 4.4.1 - Debris Piles

Debris Pile #7 - Debris Pile #7, located adjacent to the former runway, occupied an area of approximately 1,600 square feet. The major contents of the debris pile included asphalt, concrete rubble, scrap metal, and soil. Previous analytical results identified stained concrete debris within the western portion of the pile, which contained PCB concentrations greater than 44 ppm. The stained concrete debris from the western part of the pile was segregated from the remainder of the debris pile and transported off-site for disposal at a permitted facility. After removing the scrap metal from the pile for off-site recycling, the remaining concrete, asphalt and soil were consolidated in-place using heavy machinery and covered with over two feet of soil. The area was subsequently compacted and hydroseeded.



**Debris Pile #8** - Debris Pile #8 was approximately 200 feet long and 150 feet wide and contained approximately 5,600 cubic yards of miscellaneous debris. The major contents within this pile were concrete rubble, asphalt, soil, and railroad ties. Analytical results from prior sampling indicated that soils in this pile contained PCBs greater than 44 ppm but the remaining debris contained less than 44 ppm PCBs. Additional sampling of soil within this debris pile subsequent to the *Remedial Investigation Report* consisted of 18 discrete soil samples for PCB analysis by EPA Method 8082. Based on these results, soils exhibiting greater than 44 ppm PCBs were segregated and disposed of off-site at a permitted facility. The remaining debris pile area was consolidated and covered in-place with soil, compacted and hydroseeded as described for Debris Pile #7 above.

**Debris Pile #9** - Debris Pile #9 was approximately 450 feet long and 80 feet wide and contained approximately 8,000 cubic yards of concrete rubble, soil and railroad ties. Prior sampling of this debris indicated a localized area of concrete which contained greater than 44 ppm PCBs. This concrete was segregated from the remaining debris and disposed of off-site at a permitted facility. The remaining debris pile was consolidated and covered in-place with soil, compacted and hydroseeded as above.

**Debris Pile #10** - Debris Pile #10 occupied an area of approximately 900 square feet. The major contents of this pile were railroad ties and soil. Previous analytical results for this pile indicated the presence of PCBs in concentrations greater than 44 ppm in both the railroad ties and the soil. To accommodate the layout of the final Golf Course Grading Plan and Hole #4, Debris Pile #10 was removed and disposed of off-site at a permitted facility.

**Debris Pile #11** – Debris Pile #11 contained approximately 250 cubic yards of concrete and soil with PCB concentrations ranging from non-detect to 3.5 ppm. Based on these results, Debris Pile #11 was consolidated and covered in-place with soil, compacted and hydroseeded as above.

**Remaining "Act 2" Debris Piles** - The remaining Act 2 debris piles as described in the *Remedial Investigation Report* contained less than 44 ppm PCBs. These piles were consolidated in-place, scrap metal removed for off-site recycling and the remaining material covered with soil, compacted and hydroseeded as above.

**Site-Wide Debris Management** – Miscellaneous abovegrade debris piles/areas across the Site were relocated and consolidated with debris located adjacent to the Act 2 debris piles as depicted in Figures 2 and 9. Metal scrap was segregated out from these piles and shipped to an off-site metal scrap recycling facility. The remaining masonry debris in these piles were consolidated in areas adjacent to the Act 2 debris piles as shown in Figures 2 and 9, covered with soil, compacted and hydroseeded as above.

## 4.5 - Interior Structures

### **4.5.1 – Subsurface Vaults/Depressions**

#### **4.5.1.1 - MAB Subsurface Vaults/Depressions**

A visual survey was conducted to observe accessible subgrade structures within the former Main Assembly Building (MAB), noting the condition of each structure, including the presence of potential product, equipment, approximate dimensions and location within the building. Based on this subgrade survey, nine areas were identified as containing residual materials which were removed from the

THE UNITED STATES OF AMERICA  
DO hereby certify that  
[Name] is a citizen of the United States  
and is entitled to the rights and  
privileges of citizenship.

subsurface areas with a vacuum truck, characterized and properly disposed of off-site.

#### **4.5.1.2 - Power House Compressor Room Trenches**

A large subgrade pipe trench was located adjacent to the compressors located on the grade-level floor of the former Power House Compressor Room. Analytical results from residual material sampled from within the trench indicated the material contained PCBs at 130 ppm. The residual material from within the trench was removed and placed in twenty 55-gallon drums. After the residual grime and oil material was removed from the trench, a pressure/steam washer was used to complete the removal of the grime. Approximately 1,100 gallons of waste wash water and residual material was removed and collected from the Power House Compressor Trench, characterized and properly disposed of off-site.

#### **4.5.2 - MAB Substation Platform Removal**

Two transformer substation platforms located in Column Areas C7/C9 and C37/C39 of the former MAB, had previously exhibited total PCB concentrations of 8,700 and 42,000 ppm, respectively (see *Remedial Investigation Report*). Delineation sampling of the concrete surfaces on the top of these platforms was conducted using at-depth cores. Areas containing greater than 44 ppm PCBs were delineated, and subsequently, physically removed and segregated from the two platform structures using a hoeram. Horizontal and vertical delineation samples collected after these remedial measures were completed were well below 44 ppm PCBs. The PCB impacted concrete removed from the top of these platforms was

disposed of off-site at a permitted facility

## 4.6 - Exterior Subsurface Structures

### 4.6.1 - MAB Cesspool

A cesspool, located approximately 230 feet north and 40 feet west of the southwest corner of the former MAB, reportedly received discharges from a former Quality Assurance laboratory in the MAB. Visual observation indicated that the cesspool contained approximately 2.5 feet of residual material at the bottom. Pursuant to the *Cleanup Plan*, the residual material within the cesspool was removed, placed into 55-gallon drums and sampled. Analytical results indicated that the material contained PCBs greater than 44 ppm; therefore, this material was disposed of off-site in a permitted facility. The cesspool structure was then demolished and the area backfilled with soil to grade.

### 4.6.2 - Pickling Area Aviation Fuel Tanks

Two underground aviation fuel tanks and associated piping vaults were located near the southwest corner of the Pickling House. Two concrete vaults that housed the distribution piping were approximately 9 feet long, 6 feet wide, and 6 feet deep and are situated over the tanks. The lines of piping associated with the tanks were verified by conducting limited trenching activities. During these trenching activities, no odors or stained soils were noted along the piping runs and therefore soil sampling around the exposed pipes was not conducted. As discussed with the PADEP, these tanks are not regulated under the Pennsylvania Storage Tank and Spill Prevention Act (Act 32).

A backhoe was used to excavate the soil on top of the two aviation fuel tanks until the top of the tanks were exposed, at a depth of approximately 8 to 10 feet. The excavated



soils were stockpiled adjacent to the excavation. After cutting an access way into the top of the tanks, the interior of the tanks were cleaned with a pressure washer (3,000 psi). Approximately 1,570 gallons of residual material and pressure washer fluids was pumped out of the tanks and disposed of at an off-site disposal facility. The piping associated with the aviation fuel tanks was excavated, pressure washed (3,000 psi), and then disposed of off-site as scrap metal. The tanks were then completely filled with grout to meet applicable requirements and the area backfilled with soil (from the on-site borrow area) to grade, compacted and hydroseeded.

#### **4.6.3 – Misc. Exterior Vaults/Subsurface Structures**

##### **4.6.3.1 MAB Exterior Vaults/Subsurface Structure**

A subsurface concrete sedimentation vault and an associated oil/water separation vault were identified in the area north of the former MAB between columns A31 and A35. The sedimentation and oil/water separator vaults were part of a former "tub and die cleaning" system. Wastewater collected from the cleaning process drained into a sump which then drained into a sedimentation vault to allow particulate and solids to settle out prior to processing through the oil/water separator unit which was housed in an adjacent concrete vault. The sedimentation and oil/water separator vaults were covered with steel access doors and were partially filled with water and residual material. Residual material was removed from within the subsurface areas and containerized. Thirty-four drums of residual materials were generated during remedial measures in this area and subsequently transported to an off-site disposal facility. Subsequent to removing the residual materials, remaining

pumps and piping were removed from the vaults and washed using a pressure washer (3,000 psi). The interior of the concrete vaults were cleaned using the pressure washer to remove remaining residual material from the vaults and these residuals were also collected, characterized and properly disposed of off-site. At the conclusion of these remediation measures, the bottom of the vault was cracked to allow for percolation, the outlet pipe to the sewer permanently plugged with concrete, and the concrete vaults backfilled with soil to grade.

#### **4.6.3.2 - Oil/Water Separator - NW Corner of Power House Building**

A concrete vault located near the northwest corner of the former Power House was identified as an oil/water separator on historical engineering drawings. Observations of the oil/water separator indicated that the concrete vault was covered with a steel plate and was partially filled with sediment up to 3 feet thick in places. The residual sediment was removed from the vault and directly loaded into a roll-off container for disposal at an off-site facility. The concrete bottom of the vault was cracked, the outlet pipe permanently plugged with concrete and the structure backfilled to grade with soil.

### **4.7 - Exterior Surface Structures**

#### **4.7.1 - Water Tower**

The Water Tower was located near the southeast corner of the property and was previously used for fire protection purposes. Water in the tower was derived from the City of Philadelphia water main, potentially supplemented with water derived from the adjacent



concrete basin. Inspection of the interior of the water tower indicated that the tank contained a layer of dried residual material, approximately 4 to 6 inches deep, corresponding to approximately 12 to 16 cubic yards. Analytical results from a sample of the residual material indicated PCBs at a level of 334 ppm.

Based on the characterization of the residual material, the accumulated material was removed by carefully transferring it to a roll-off container situated on the ground beneath the tank. After removing the residual material, the interior of the tank was power washed with a 3,000 psi pressure washer. The power washing fluids were contained in the on-site temporary storage tank and processed through the on-site treatment system (carbon filter) and subsequently discharged to the sanitary sewer. Accumulated materials (removed residuals and spent carbon) were sent to a permitted off-site facility for disposal. Following removal of residual materials and decontamination activities as described above, the Water Tower was prepared for demolition. This preparation included the closure/backfilling of the subsurface valve pit beneath the Tower with soil and cutting/capping of area piping. For demolition and associated material handling purposes, it was assumed that the Water Tower structure contained lead paint, and the demolition contractor completed the demolition process in accordance with applicable regulations based on this assumption.

#### 4.7.2 - Concrete Basin

As detailed in the *Cleanup Plan*, the Concrete Basin was integrated into the final golf course design as a reservoir for the spray irrigation system. Previous remedial activities in the Concrete Basin as detailed in the *Remedial Investigation Report* included the removal of standing water and residuals from within the basin and rinsing of the surfaces with a 2,000

psi power washer. The concrete basin has remained mainly empty since the 1993 remedial activities and the surfaces have been exposed to weathering, including the joint seals. To facilitate the use of the Concrete Basin for water storage as part of the spray irrigation system, the interior structures and utilities within the basin were demolished and removed. The below grade portion of the fire well was power washed and was left intact for future use. Concrete demolition debris from the basin superstructure was removed from the basin, size-reduced and handled with the building demolition debris (see Section 4.8.2).

At the completion of the interior demolition activities and removal of the distribution piping header, the remaining concrete surfaces, including the fire well pit and cold well, were pressure washed with a 10,000 psi pressure washer to remove surficial residuals. Power washing activities proceeded from the upper walls of the basin, to the lower sloped walls, and finally the basin floor. The approximately 36,000 gallons of wash water generated from these activities were sent through a carbon filter for treatment and discharged (with authorization) to the sanitary sewer. At the conclusion of surficial decontamination, the basin condition was evaluated by performing a post-decontamination water quality test. This test consisted of filling the concrete basin to a depth of approximately three feet with City water and collecting a water sample after one week. This pilot test was utilized to represent the future use of the basin. The analytical results showed that the water did not contain detectable concentrations of PCBs, the only potential remaining regulated substance of concern for this area.

#### **4.7.3 – Power House Aboveground Fuel Tank**

A former aboveground fuel oil storage tank, with a capacity of approximately 100,000 gallons, was located approximately 40 feet west of the former Power House near the southern portion of the site. The tank was used to store #6 fuel oil that fueled the boiler inside the adjacent Power House. This tank was approximately 1/3 full, corresponding to approximately 27,100 gallons of #6 fuel oil. This material was removed from the tank and shipped off-site for recycling. After removing the #6 fuel oil, the interior of the tank was rinsed with water. The wash water was pumped out of the tank and transported to an off-site disposal facility. The tank walls and bottom were then cut into manageable pieces using a power cut-off saw and processed as scrap metal at an off-site facility. Impacted soils based on visual observations beneath the tank bottom were excavated and placed in roll-off containers. Approximately 120 tons of soil were excavated from beneath the tank and placed in roll-off boxes and disposed of at a permitted off-site disposal facility.

Following excavation, two confirmation soil samples (0 to 6 inches) were collected and analyzed for VOCs and SVOCs by EPA Method 8260/8720 to document potential remaining levels of petroleum-related constituents. The results from these soil samples were below the Statewide Health Standards for direct contact for surface soil. This area was subsequently backfilled to grade from the on-site borrow area. Analytical results from the two soil confirmation samples are included in Appendix A.

#### **4.7.4 – Railroad Tie Removals**

In preparation for future golf course construction, Allegheny Iron & Metal Co., Inc. (Allegheny) was subcontracted to remove the exposed rails, switches, and associated rail spikes and wooden rail ties from the site. Approximately 6 miles of rail was removed and transported to off-site facilities for either recycling as scrap metal or for reuse. Whole wooden ties removed from the exterior areas were transported to an off-site facility for reuse or disposal.

#### **- Building Decontamination/Demolition**

On-site buildings and structures were decontaminated, as necessary, and demolished as cribed within the *Cleanup Plan*. These buildings included the MAB, Rainbow Room, Chevrolet bldg, Pickling House, and Power House. It should be noted that the garage was initially scheduled demolition within the *Cleanup Plan*, however, it has since been identified that this building will main intact for future use. As required, asbestos-containing materials (ACM) were properly removed in the buildings. During demolition activities, steel and other metallic debris were recovered, regated, and recycled. The non-metallic masonry debris were size-reduced and beneficially re-used fill material during the golf course construction phase. The floor slabs were cracked for percolation l covered with soil, pavement/subbase for the golf course parking lot area, or size-reduced building ris as in the case of the cover material for the golf course driving range. Specific edial/demolition activities are described below.

#### **4.8.1 – Piping/Appurtenances and Utilities Abandonment**

During the building demolition program and golf course construction program select utilities were closed and abandoned. Sanitary storm sewer lines emanating from within the demolished buildings and structures were isolated at junction with the sanitary sewer main line.

The main sanitary sewer line located in the front lawn area was kept intact for future golf course facility use. Storm sewer lines originating within demolished buildings were isolated at building walls to prevent collection and flow of runoff off-site. The potable water system was isolated from demolished buildings and structures. The main water line was left active from the Pump House to the Garage for future use. The fire protection distribution system was modified for future golf course use. The former distribution line which previously encircled the MAB, was isolated at the eastern and western junctions to leave the southern leg of the line intact for future use with the completed golf course.

#### **4.8.2 – Demolition Debris Placement (including Railroad Ravine Backfilling)**

Based on the extensive amount of characterization data generated for the demolished Site buildings as previously presented within the *Remedial Investigation Report*, PADEP agreed that additional PCB sampling of building demolition debris was not required to characterize this material for reuse on-site as backfill. Additional pre-characterization sampling was conducted to conservatively estimate the potential lead and chromium levels that would remain in the building debris from any painted surfaces. All of the chromium and lead sampling results were well below Act 2 Statewide Health Standards for non-residential use and passed the TCLP analysis. Analytical results from this sampling program are summarized in

Table 2.

Based on the pre-characterization data, discussions with the PADEP, and consistent with the *Cleanup Plan*, the debris generated from the demolition of the buildings and structures remained on-site and was re-used as fill material. As agreed to with PADEP, protruding rebar and other scrap was torched and magnetically removed from the debris during size-reducing operations for off-site recycling. Debris was appropriately downsized and placed in lifts for the sole purpose of meeting the structural backfill/compaction engineering design specification to control future settlement in areas where debris was placed. Additionally, compaction density testing was conducted in the debris fill areas to confirm contractor compliance with the engineering specifications.

#### **4.8.3 - MAB and Rainbow Room Decontamination Activities**

As detailed within Section 2.3.2 and 4.7.1 of the *Remedial Investigation Report*, interior surfaces of the MAB and Rainbow Room were previously decontaminated. Power washing consisted of a high-pressure surface wash of building walls, floors and ceilings. However, at the conclusion of the decontamination activities, localized areas containing PCBs greater than 50 ppm in pervious surfaces and greater than 10 ug/100 cm<sup>2</sup> on impervious surfaces remained in building superstructures. These local areas of PCB impacts were well delineated prior to building demolition activities such that the demolition contractor either 1) decontaminated these materials to meet applicable standards, or 2) disposed of them off-site at a permitted facility.

Prior to building demolition, subsurface voids, such as pits, vaults, and trenches were accessed, cataloged, and inspected to identify potential areas of environmental concern.

Identified residual material/product from these areas were removed, containerized and disposed of at an off-site permitted facility. At the conclusion of the limited subsurface remedial activities, the MAB and Rainbow Room were demolished to floor level. Building demolition debris was managed, as described within Section 4.8.2 above. Subsurface voids were backfilled with size-reduced concrete material and the floor slab was cracked to allow for percolation of rain water.

To assess residual PCB levels in the former MAB floor slab area designated for the future driving range, six surface concrete core samples (0 to 3 inches) were collected for PCB analysis by EPA Method 8082. These samples were collected from the areas previously identified as containing greater than 44 ppm PCBs. Confirmation results (listed in Appendix A) ranged from 1.6 to 21 ppm PCBs, showing that the portion of the former MAB floor slab area designated for the future golf course driving range contains less than 44 ppm PCBs (see Figure 8).

#### **4.8.4 - Chevrolet Building**

Prior to demolition of the Chevrolet Building, asbestos containing materials were removed and disposed of off-site by a licensed asbestos contractor. Abovegrade permeable structures with PCB concentrations greater than 50 ppm were surficially washed and decontaminated to less than 50 ppm prior to demolition. During demolition operations, abovegrade building impervious/metallic surfaces within the Chevrolet Building were segregated from pervious building debris and power washed by the demolition contractor in accordance with federal requirements to remove residual PCBs as required prior to sending the debris to an off-site facility for recycling. Pervious building debris was size-reduced and

managed in accordance with Section 4.8.2 above. Subsurface voids were backfilled with size-reduced concrete material and the floor slab was cracked to allow for percolation of rain water.

#### **4.8.5 - Pickling House and Power House**

Demolition and related measures completed for the Power House and Pickling Building were consistent with the *Cleanup Plan*. Prior to demolition, an asbestos abatement program was completed by a licensed asbestos contractor in each building. Pre-characterization samples from the buildings indicated that special handling or decontamination of building superstructures was not required for the either building as documented in the *Remedial Investigation Report*. Pre-characterization samples did indicate the presence of PCBs in the top surface of concrete and grime on the floor slab and therefore the same approach utilized for the Chevrolet Building was followed for these structures, as appropriate. The Pickling House and Power House were demolished to floor grade and subsurface voids were filled with size-reduced building debris. Building debris was managed in accordance with the procedures described in Section 4.8.2.

#### **4.8.6 - Other Structures**

Other structures that contained PCBs or other regulated substances included the Overhead Conveyor (between MAB and Chevrolet Building), the Scrap Conveyor, the Incinerator, the Access Tunnels, the Water Tower and Concrete Basin and associated Pump House. Specific decontamination of impacted structures were completed prior to the start of demolition. In general, impacted materials were removed from building surfaces and sent off-site for disposal at a permitted facility.



The Overhead Conveyor and the Scrap Conveyor structures were decontaminated as required prior to demolition in accordance with the procedures described in Section 4.8.3. For the incinerator, the stack was separately demolished and the hearth brick segregated out from the remaining demolished structure for proper handling and off-site disposal as a RCRA-characteristic hazardous waste as outlined in the *Cleanup Plan*. The Pump House and Concrete Basin were rehabilitated and were not demolished given their future use as part of the golf course plans. The other structures listed above were demolished to grade according to the *Cleanup Plan*. As with the buildings, the debris generated while demolishing these structures were handled in accordance with the procedures described in Section 4.8.2. Subsurface portions of the Access Tunnels were backfilled with size-reduced building debris.

SECTION 8

SECTION 5

SECTION 6

#### **5.1.1.5 - Electrical System Modifications**

The electrical system was modified to eliminate service to demolished buildings while maintaining service to the Pump House, Garage, office trailers, and Western Guard House. Electrical conduits removed from service were abandoned in place and the ends were permanently plugged with concrete to reduce infiltration from former building areas.

#### **5.1.2 Building and Structures**

Preparatory to building demolition and golf course construction, additional facility deactivation measures related to Site buildings/structures were conducted. These measures were implemented to facilitate the final golf course construction and are described below.

##### **5.1.2.1 Concrete Basin Surficial Wash**

Consistent with the *Cleanup Plan*, the Concrete Basin was integrated into the final golf course design as part of the future golf course spray irrigation system. Previous remedial activities in the Concrete Basin conducted in 1993 included removing standing water and residuals from within the Basin and rinsing basin surfaces with a 2,000 psi power washer. The Concrete Basin remained empty since the 1993 remedial activities and the surfaces were exposed to weathering, including the joint seals.

To facilitate the re-use of the Concrete Basin as a water storage area for golf course irrigation, the basin superstructures were demolished/removed and the surface

of the Concrete Basin was power washed with a 10,000-psi pressure washer for final removal of surface residuals. Water supply and return lines for the Concrete Basin were permanently grouted. At the conclusion of the additional surficial pressure wash activities, the suitability of the Basin for its intended purpose was evaluated by performing a water quality test which consisted of partially filling the Concrete Basin with approximately three feet of water and collecting a water sample after one week. The analytical results from this test showed that the water did not contain detectable concentrations of PCBs, the only potential remaining regulated substance of concern for this area. The joints in the Concrete Basin were subsequently sealed for future spray irrigation system/storage purposes.

To facilitate utilization of the Pump House for the future golf course spray irrigation system, equipment and associated piping inside the Pump House was removed. Removed equipment and associated piping from the Pump House and Concrete Basin were rinsed and transported to an off-site location for recycling as scrap. The two drainage sumps in the Pump House were cleaned out and permanently closed with grout.

#### **5.1.2.2 Power House Decommissioning**

Power House Basement Sump – Water, residual oil and grease, and approximately two feet of sludge was pumped from a sump located in the basement of the Power House. Based on characterization results, this material was disposed off-site in an appropriate manner. The area was subsequently backfilled during the Building Demolition Program.

Power House Compressor Room Trenches – Residual oil and grease was located within a large subgrade pipe trench within the Power House Compressor Room. Analytical results from previous sampling of this grime material indicated the presence of PCBs at 130 ppm. Prior to demolition, the residual material from the trench was removed and the walls and floor of the trench were pressure washed with a steam pressure washer to remove residuals. Accumulated wash water and residual material were disposed off-site in an appropriate manner. The area was subsequently backfilled during the Building Demolition Program.

Power House Oil/Water Separator – Water and sediment were present in an underground oil/water separator located adjacent to the Power House. The water and sediment in this unit were removed for off-site disposal in an appropriate manner. Subsequent to removal of the residual sediment and water, the concrete bottom of the vault was cracked and then backfilled with approximately 20 cubic yards of soil. The outlet pipe leading to the sewer was permanently plugged with concrete.

#### **5.1.2.3 - Exterior Paint Subsurface Vault**

A former concrete vault located outside the eastern side of the Exterior Paint Room was reportedly used to discharge residual liquids from the Paint Room to a former disposal area. The vault contained water and residual sediment. Consistent with similar underground structures at the Site, the water and sediment in this vault were removed for appropriate disposal off-site. Following removal, the vault floor was cracked and backfilled with soil.

## Section 6 - Conclusions

This *Final Report* and the *Supplemental Ground Water Final Report* are the final submissions to PADEP under the Act 2 Program and, upon approval, Transit America will have successfully implemented the *Cleanup Plan*. The *Ground Water Final Report* for the site demonstrated attainment of the selected Act 2 standards for ground water and was previously approved by the PADEP in March 2000. The information presented in this *Final Report*, and incorporated by reference from the *Remedial Investigation Report*, *Cleanup Plan* and *Ground Water Final Report*, demonstrates attainment of the selected Act 2 standards for soil and the remaining Site conditions. The numerous remedial measures completed consistent with the *Cleanup Plan* and the final Golf Course Master Plan provide further environmental benefit and further reduce risk for the Site.

The remedy implemented pursuant to the PADEP-approved *Cleanup Plan* in order to attain the selected Act 2 remediation standards requires no post remediation care. A deed acknowledgement and specific deed restrictions will be prepared when the property is sold in accordance with Act 2.

In view of the demonstration of attainment pursuant to Act 2, Transit America, the current owner of the Site, and The Budd Company, its sister corporation which has participated in the remediation of the Site, qualify for the cleanup liability protection afforded by Section 501 of Act

2.

## Section 7 – Post Remediation Care Plan

The remedy implemented pursuant to the PADEP-approved *Cleanup Plan* in order to attain the select Act 2 remediation standards requires no post remediation care. In accordance with Act 2, a deed acknowledgement and specific deed restrictions will be included as described below.

### 7.1 – Deed Acknowledgement and Restrictions

A statutory deed acknowledgement for the Site is required at the time of sale because the Site-Specific Standard under Act 2 has been achieved. As appropriate, the deed will reflect the planned golf course use. In addition to the required description of the presence of regulated substances, Transit America will also identify in the deed the location of 1) all known subsurface piping, 2) the eight former subsurface disposal areas, 3) areas where demolition debris was beneficially used on the Site, 4) covered debris piles and subsurface debris areas, 5) former building floor slab areas, and 6) covered areas where subsurface soils contain PCBs greater than 44 ppm.

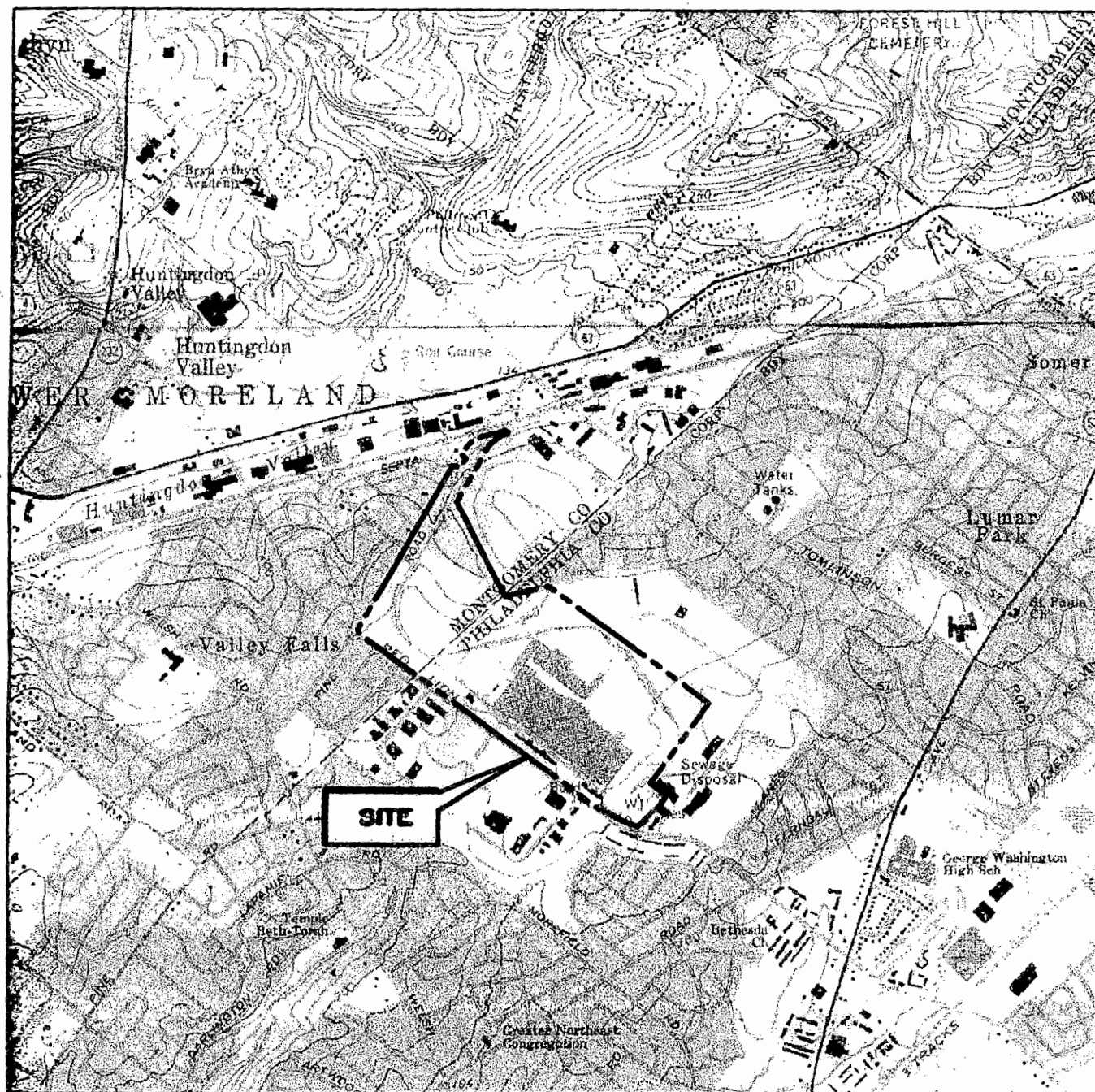
As an integral part of the attainment of the Site-Specific Standard under Act 2, Transit America has relied upon institutional controls to eliminate potential exposure pathways and, in one area only with respect to ground water, future engineering controls. The institutional and future engineering controls are imposed in the form of deed restrictions which limit certain on-site activities in order to maintain the level of environmental protection attained that is necessary to meet the Site-Specific Standard. The main objective of these restrictions is to preclude the use of ground water for drinking water or agricultural purposes and to prevent or mitigate exposure to regulated substances remaining on the Site. Since it is not required, the fencing around the Site may be removed before completion of the golf course.

The following restrictions will be placed in the appropriate deeds for the Site:

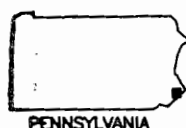
1. The use of ground water for drinking water or agricultural purposes is prohibited.
2. The eight former subsurface disposal areas, areas where demolition debris was beneficially used, covered debris piles and subsurface debris areas, former floor slab areas and covered areas where subsurface soils contain PCBs greater than 44 ppm will be clearly identified in the deed. These areas are all shown on Figures 2, 3 and 11. Penetration of the surfaces of these areas shall be prohibited unless an appropriate Health and Safety Plan is in place to protect workers entering such areas. Additionally, if disturbed, these areas shall be backfilled and restored to match existing conditions so as to maintain the appropriate restriction.
3. Along Red Lion Road in Philadelphia County where residential Statewide Health Standards for soils have been achieved, and ground water meets the Site-Specific Standard for residential use, all structures for residential use must include as a permanent engineering control a vapor barrier as part of building construction to prevent potential VOC vapors from the subsurface from migrating into building structures in excess of Act 2 standards.

Those portions of the Site meeting residential standards for soil and ground water will be surveyed and clearly identified in the deed. Within the areas attaining residential standards, the locations where future engineering controls are required will also be clearly identified. All areas subject to deed restrictions are shown on Figure 11.

FIGURE 1



ADAPTED FROM USGS 7.5 MINUTE QUADS TITLED FRANKFORD AND HATBORO, PA



STATE LOCATION MAP

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6/9/00

**TRANSIT AMERICA INC.  
PHILADELPHIA, PENNSYLVANIA  
FINAL REPORT FOR SOILS  
USGS SITE LOCATION MAP**

